What is claimed is:

1. A method of performing digital optical communications to transmit an optical signal through an optical fiber, comprising the step of:

shaping the waveform of the optical signal to be transmitted through the optical fiber to increase the frequency thereof before the waveform is stabilized when the optical signal starts increasing in level at the time the optical signal is applied to the optical fiber.

2. A semiconductor laser comprising:

a diffraction grating for effecting distribution feedback, said diffraction grating having a normalized coupling coefficient κL of at least 2.0, said diffraction grating having a phase shift region disposed therein for achieving a phase shift of at most $\lambda/4$; and

an active layer having a gain which is saturated as a carrier concentration in the active layer increases.

3. A semiconductor laser according to claim 2, further comprising a resonator, said phase shift region being disposed nearly centrally in said resonator.

4. A semiconductor laser according to claim 2, wherein said active layer has a multiple quantum well structure having growth surface irregularities.

5. A semiconductor laser according to claim 3, wherein said active layer has a multiple quantum well structure having growth surface irregularities.

6. A semiconductor laser according to claim 2, wherein said active layer has a multiple quantum well structure composed of two stage potential quantum wells.

7. A semiconductor laser according to claim 3, wherein said active layer has a multiple quantum well structure composed of two stage potential quantum wells.

8. A semiconductor laser according to claim 2, wherein said active layer has a multiple quantum well structure including a non-radiative carrier recombination layer.

9. A semiconductor laser according to claim 3, wherein said active layer has a multiple quantum well structure including a non-radiative carrier recombination layer.

10. A semiconductor laser according to claim 2, wherein said active layer has a multiple quantum well structure which is progressively thicker toward the center of the semiconductor laser in the axial direction of the resonator.

11. A semiconductor laser according to claim 3, wherein said active layer has a multiple quantum well structure which is progressively thicker toward the center of the semiconductor laser in the axial direction of the resonator.

12. A digital optical communication system comprising a semiconductor laser according to claim 2 as a communication light source.

13. A digital optical communication system comprising a semiconductor laser according to claim 3 as a communication light source.